

AUTHORIZATION TO DISCHARGE UNDER THE  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Clean Water Act as amended, (33 U.S.C. §§1251 et seq.; the "CWA"), and the Massachusetts Clean Waters Act, as amended, (M.G.L. Chap. 21, §§26-53),

**Town of Sturbridge**

is authorized to discharge from the facility located at

**End of Old New Boston Road  
Sturbridge, MA 01566**

to receiving water named

**Quinebaug River  
Quinebaug Watershed (41)**

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

This permit shall become effective sixty days from the date of signature.

This permit and the authorization to discharge expire at midnight, July 31, 2006.  
This permit supersedes the permit issued on September 29, 1999.

This permit consists of 11 pages in Part I including effluent limitations, monitoring requirements, Attachment A, Freshwater Chronic Toxicity Test Procedure & Protocol; Attachment B, Sludge Guidance; and 35 pages in Part II including General Conditions and Definitions.

Signed this 2<sup>nd</sup> day of January, 2002

/Signature on File/  
Linda M. Murphy

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Director  
Office of Ecosystem Protection  
Environmental Protection Agency  
Boston, MA

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Director  
Division of Watershed Management  
Bureau of Resource Protection  
Department of Environmental Protection  
Commonwealth of Massachusetts  
Boston, MA

## NPDES Permit No. MA0100421

Part1.A.1. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge from outfall serial number <b>001</b> , treated effluent to the Quinebaug River. Such discharges shall be limited and monitored as specified below.								
<u>EFFLUENT CHARACTERISTIC</u>			<u>EFFLUENT LIMITS</u>			<u>MONITORING REQUIREMENTS</u>		
<u>PARAMETER</u>	<u>AVERAGE MONTHLY</u>	<u>AVERAGE WEEKLY</u>	<u>MAXIMUM DAILY</u>	<u>AVERAGE MONTHLY</u>	<u>AVERAGE WEEKLY</u>	<u>MAXIMUM DAILY</u>	<u>MEASUREMENT FREQUENCY</u>	<u>SAMPLE<sup>3</sup> TYPE</u>
FLOW <sup>2</sup>	*****	*****	*****	0.75 MGD	*****	*****	CONTINUOUS	RECORDER
BOD <sub>5</sub> (April 1 - September 30)	63 lbs/day	63 lbs/day	94 lbs/day	10 mg/l	10 mg/l	15 mg/l <sup>1</sup>	3/WEEK	24-HOUR COMP. <sup>4,5</sup>
BOD <sub>5</sub> (October 1 - March 31)	125 lbs/day	125 lbs/day	188 lbs/day	20 mg/l	20 mg/l	30 mg/l <sup>1</sup>	3/WEEK	24-HOUR COMP. <sup>4,5</sup>
TSS (April 1- September 30)	63 lbs/day	63 lbs/day	94 lbs/day	10 mg/l	10 mg/l	15 mg/l <sup>1</sup>	3/WEEK	24-HOUR COMP. <sup>4,5</sup>
TSS (October 1 - March 31)	125 lbs/day	125 lbs/day	188 lbs/day	20 mg/l	20 mg/l	30 mg/l <sup>1</sup>	3/WEEK	24-HOUR COMP. <sup>4,5</sup>
pH RANGE <sup>1</sup>	6.5 - 8.3 SU SEE PERMIT PAGE 5 OF 11, PARAGRAPH I.A.1.b.						1/DAY	GRAB
TOTAL CHLORINE RESIDUAL <sup>1,6</sup> (April 1 - October 31)	*****	*****	*****	80 ug/l	*****	131 ug/l	1/DAY	GRAB
FECAL COLIFORM <sup>1,6</sup> (April 1 - October 31)	*****	*****	*****	200/100 ml	*****	400/100 ml	1/WEEK	GRAB

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DISSOLVED OXYGEN (April 1-October 31)	NOT LESS THAN 6.0 mg/l	1/DAY	GRAB
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A.1. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge from outfall serial number **001**, treated effluent to the Quinebaug River. Such discharges shall be limited and monitored as specified below.

<u>EFFLUENT CHARACTERISTIC</u>		<u>EFFLUENT LIMITS</u>			<u>MONITORING REQUIREMENTS</u>		
<u>PARAMETER</u>	<u>AVERAGE MONTHLY</u>	<u>AVERAGE WEEKLY</u>	<u>AVERAGE MONTHLY</u>	<u>AVERAGE WEEKLY</u>	<u>MAXIMUM DAILY</u>	<u>MEASUREMENT FREQUENCY</u>	<u>SAMPLE<sup>3</sup> TYPE</u>
TOTAL NITRATE	Report lbs/day	*****	Report mg/l	*****	Report mg/l	1/MONTH	24-HOUR COMP. <sup>5</sup>
TOTAL NITRITE	Report lbs/day	*****	Report mg/l	*****	Report mg/l	1/MONTH	24-HOUR COMP. <sup>5</sup>
TOTAL KJELDAHL NITROGEN	Report lbs/day	*****	Report mg/l	*****	Report mg/l	1/MONTH	24-HOUR COMP. <sup>5</sup>
AMMONIA-NITROGEN (June 1 - October 31)	9.4 lbs/day	Report lbs/day	1.5 mg/l	*****	2.0 mg/l	1/WEEK	24-HOUR COMP. <sup>5</sup>
AMMONIA-NITROGEN (November 1 - May 31)	Report lbs/day	*****	Report mg/l	*****	Report mg/l	1/MONTH	24-HOUR COMP. <sup>5</sup>
PHOSPHORUS (April 1 - September 30)	6.3 lbs/day	*****	1.0 mg/l	*****	1.5 mg/l	1/Week	24-HOUR COMP. <sup>5</sup>

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TOTAL COPPER <sup>7</sup>	0.2lbs/day	*****	20 ug/l	*****	26 ug/l	1/MONTH	24-HOUR COMP. <sup>5</sup>
WHOLE EFFLUENT TOXICITY <sup>8,9,10,11</sup>	Acute LC <sub>50</sub> ≥ 100% Chronic C-NOEC ≥ 15%						4/YEAR

Sampling for effluent parameters shall be conducted at a representative point prior to mixing with other streams.

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### Footnotes:

1. Required for State Certification.
2. For flow, report maximum and minimum daily rates and total flow for each operating date. This is an annual average limit, which shall be reported as a rolling average. The first value will be calculated using the monthly average flow for the first full month ending after the effective date of the permit and the eleven previous monthly average flows. Each subsequent month's DMR will report the annual average flow that is calculated from that month and the previous 11 months.
3. All required effluent samples shall be collected at the point prior to mixing with other streams. Any change in sampling location must be reviewed and approved in writing by EPA and MADEP. All samples shall be tested using the analytical methods found in 40 CFR §136, or alternative methods approved by EPA in accordance with the procedures in 40 CFR §136. All samples shall be 24 hour composites unless specified as a grab sample in 40 CFR §136.
4. Sampling required for influent and effluent.
5. A 24-hour composite sample will consist of at least twenty four (24) grab samples taken during one working day.
6. Fecal coliform and total residual chlorine monitoring will be conducted during the period April 1st through October 31st only, to reflect the seasonal chlorination period. This is also a State certification requirement. Fecal coliform discharges shall not exceed a monthly geometric mean of 200 colony forming units per 100 ml, nor shall they exceed 400 colony forming units per 100 ml as a daily maximum. This monitoring shall be conducted concurrently with the TRC sampling.
7. All effluent copper sampling results collected in a given month shall be used for discharge monitoring report (DMR).
8. The permittee shall conduct chronic (and modified acute) toxicity tests four times per year. The chronic test may be used to calculate the acute LC<sub>50</sub> at the 48 hour exposure interval. The permittee shall test the daphnid, *Ceriodaphnia dubia*, and fathead minnows, *Pimephales promelas*. Toxicity test samples shall be collected during the second week of the months of February, May, August and November. The test results shall be submitted by the last day of the month following the completion of the test. The results are due March 31<sup>th</sup>, June 30<sup>th</sup>, September 30<sup>th</sup> and December 31<sup>th</sup>, respectively. The tests must be performed in accordance with test procedures and protocols specified in **Attachment A** of this permit.

Test Dates Second Tuesday in	Submit Results By:	Test Species	Acute Limit LC <sub>50</sub>	Chronic Limit C-NOEC
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February May August November	March 31 <sup>st</sup> June 30 <sup>th</sup> September 30 <sup>th</sup> December 31 <sup>st</sup>	<u>Ceriodaphnia dubia</u> (Daphnid) and <u>Pimephales</u> <u>Promelas</u> (fathead minnows) See Attachment A	≥ 100%	≥ 15%
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After submitting **one year** and a **minimum** of two consecutive sets of WET test results, all of which demonstrate compliance with the WET permit limits, the permittee may request a reduction in the WET testing requirements. The permittee is required to continue testing at the frequency specified in the permit until notice is received by certified mail from the EPA that the WET testing requirement has been changed.

9. The LC<sub>50</sub> is the concentration of effluent which causes mortality to 50% of the test organisms. Therefore, a 100% limit means that a sample of 100% effluent (no dilution) shall cause no more than a 50% mortality rate.
10. C-NOEC (chronic-no observed effect concentration) is defined as the highest concentration of toxicant or effluent to which organisms are exposed in a life cycle or partial life cycle test which causes no adverse effect on growth, survival, or reproduction at a specific time of observation as determined from hypothesis testing where the test results exhibit a linear dose-response relationship. However, where the test results do not exhibit a linear dose-response relationship, the permittee must report the lowest concentration where there is no observable effect. The "15% or greater" limit is defined as a sample which is composed of 15% (or greater) effluent, the remainder being dilution water. This is a maximum daily limit derived as a percentage of the inverse of the dilution factor of 6.9.
11. If toxicity test(s) using receiving water as diluent show the receiving water to be toxic or unreliable, the permittee shall follow procedures outlined in **Attachment A Section IV., DILUTION WATER** in order to obtain permission to use an alternate dilution water. In lieu of individual approvals for alternate dilution water required in **Attachment A**, EPA-New England has developed a Self-Implementing Alternative Dilution Water Guidance document (called "Guidance Document") which may be used to obtain automatic approval of an alternate dilution water, including the appropriate species for use with that water. If this Guidance document is revoked, the permittee shall revert to obtaining approval as outlined in **Attachment A**. The "Guidance Document" has been sent to all permittees with their annual set of DMRs and Revised Updated Instructions for Completing EPA's Pre-Printed NPDES Discharge Monitoring Report (DMR) Form 3320-1 and is not intended as a direct attachment to this permit. Any modification or revocation to this "Guidance Document" will be transmitted to the permittees as part of the annual DMR instruction package. However, at any time, the permittee may choose to contact EPA-New England directly using the approach outlined in **Attachment A**.

Part I.A.1. (Continued)

- a. The discharge shall not cause a violation of the water quality standards of the receiving waters.
  - b. The pH of the effluent shall not be less than 6.5 nor greater than 8.3 at any time, unless these values are exceeded as a result of an approved treatment process.
  - c. The discharge shall not cause objectionable discoloration of the receiving waters.
  - d. The effluent shall contain neither a visible oil sheen, foam, nor floating solids at any time.

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- e. The permittee's treatment facility shall maintain a minimum of 85 percent removal of both total suspended solids and biochemical oxygen demand. The percent removal shall be based on monthly average values.
- f. When the effluent discharged for a period of 90 consecutive days exceeds 80 percent of the designed flow, the permittee shall submit to the permitting authorities a projection of loadings up to the time when the design capacity of the treatment facility will be reached, and a program for maintaining satisfactory treatment levels consistent with approved water quality management plans.
- g. The permittee shall minimize the use of chlorine while maintaining adequate bacterial control.
- h. The results of sampling for any parameter above its required frequency must also be reported.
- i. Phosphorus Loading and Evaluation and Reduction Program

The permittee shall undertake the following steps during the duration of the permit to optimize a reduction in phosphorus loading from the facility to the Quinebaug River. The permittee is required to undertake the following:

Within twelve months of the issuance of the permit, the permittee shall implement a phosphorus monitoring program and complete a loading analysis sufficient to characterize loadings into the facility as well as loadings to the Quinebaug River; the evaluation shall be such that variations in loadings can be determined with a high degree of confidence; the results of this analysis should be submitted to the permit authorities within three months of the completion of the study.

Within twenty-four months of the issuance of the permit, the permittee shall develop an optimization plan to provide maximum removal of phosphorus with the current facility with possible alterations to treatment techniques (e.g. multiple dosing points for metal salt injections), and shall develop a program to minimize influent phosphorus loads. The plan should be submitted to the regulatory agencies within three months of completion and implemented during the remaining time period of the permit.

### 2. All POTWs must provide adequate notice to the Director of the following:

- a. Any new introduction of pollutants into that POTW from an indirect discharger in a primary industry category discharging process water; and
- b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
- c. For purposes of this paragraph, adequate notice shall include information on:
  - (1) the quantity and quality of effluent introduced into the POTW; and
  - (2) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

### 3. Prohibitions Concerning Interference and Pass Through:

- a. Pollutants introduced into POTW's by a non-domestic source (user) shall not pass through the POTW or interfere with the operation or performance of the works.

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- b. If, within 30 days after notice of an interference or pass through violation has been sent by EPA to the POTW, and to persons or groups who have requested such notice, the POTW fails to commence appropriate enforcement action to correct the violation, EPA may take appropriate enforcement action.

### **4. Toxics Control**

- a. The permittee shall not discharge any pollutant or combination of pollutants in toxic amounts.
- b. Any toxic components of the effluent shall not result in any demonstrable harm to aquatic life or violate any state or federal water quality standard which has been or may be promulgated. Upon promulgation of any such standard, this permit may be revised or amended in accordance with such standards.

### **5. Numerical Effluent Limitations for Toxicants**

EPA or DEP may use the results of the toxicity tests and chemical analyses conducted pursuant to this permit, as well as national water quality criteria developed pursuant to Section 304(a)(1) of the Clean Water Act (CWA), state water quality criteria, and any other appropriate information or data, to develop numerical effluent limitations for any pollutants, including but not limited to those pollutants listed in Appendix D of 40 CFR Part 122.

## **B. UNAUTHORIZED DISCHARGES**

The permittee is authorized to discharge only in accordance with the terms and conditions of this permit and only from the outfall listed in Part I A.1. of this permit. Discharges of wastewater from any other point sources, including sanitary sewer overflows (SSOs) are not authorized by this permit and shall be reported in accordance with Section D.1.e. (1) of the General Requirements of this permit (Twenty-four hour reporting).

## **C. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM**

Operation and maintenance of the sewer system shall be in compliance with the General Requirements of Part II and the following terms and conditions:

### **1. Maintenance Staff**

The permittee shall provide an adequate staff to carry out the operation, maintenance, repair, and testing functions required to ensure compliance with the terms and conditions of this permit.

### **2. Preventative Maintenance Program**

The permittee shall maintain an ongoing preventative maintenance program to prevent overflows and bypasses caused by malfunctions or failures of the sewer system infrastructure. The program shall include an inspection program designed to identify all potential and actual unauthorized discharges.

### **3. Infiltration/Inflow Control Plan:**

The permittee shall develop and implement a plan to control infiltration and inflow (I/I) to the separate sewer system. The plan shall be submitted to EPA and MA DEP within six months of the effective date of this permit (see page 1 of this permit for the effective date) and shall describe the permittee's program for preventing infiltration/inflow related effluent limit violations, and all unauthorized discharges of wastewater, including overflows and by-passes due to excessive infiltration/inflow.

The plan shall include:



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- An ongoing program to identify and remove sources of infiltration and inflow. The program shall include the necessary funding level and the source(s) of funding.
- An inflow identification and control program that focuses on the disconnection and redirection of illegal sump pumps and roof down spouts. Priority should be given to removal of public and private inflow sources that are upstream from, and potentially contribute to, known areas of sewer system backups and/or overflows
- Identification and prioritization of areas that will provide increased aquifer recharge as the result of reduction/elimination of infiltration and inflow to the system.
- An educational public outreach program for all aspects of I/I control, particularly private inflow.

### Reporting Requirements:

A summary report of all actions taken to minimize I/I during the previous calendar year shall be submitted to EPA and the MA DEP annually, by the anniversary date of the effective date of this permit. The summary report shall, at a minimum, include:

- A map and a description of inspection and maintenance activities conducted and corrective actions taken during the previous year.
- Expenditures for any infiltration/inflow related maintenance activities and corrective actions taken during the previous year
- A map with areas identified for I/I-related investigation/action in the coming year.
- A calculation of the annual average I/I, the maximum month I/I for the reporting year.
- A report of any infiltration/inflow related corrective actions taken as a result of unauthorized discharges reported pursuant to 314 CMR 3.19(20) and reported pursuant to the Unauthorized Discharges section of this permit.

### 3. Alternate Power Source

In order to maintain compliance with the terms and conditions of this permit, the permittee shall continue to provide an alternative power source with which to sufficiently operate its treatment works (as defined at 40 CFR §122.2).

### 4. Chlorination System Report

Within 12 months of the effective date of the permit, the permittee will submit a report documenting the effectiveness of the chlorination and dechlorination systems. The report will specifically address how flow variability and chlorine demand variability affect compliance with the TRC and fecal coliform limits at all times. Sampling data shall be provided to support conclusions on how hourly and daily flow and chlorine demand variability affects permit compliance. The report will include a description of the chlorination and dechlorination systems and the methods for dosage control. The report will identify all changes necessary to ensure compliance with the TRC and fecal coliform limits at all times, including equipment modifications and upgrades, operational procedures (including calibration procedures and alarm/response procedures), and sampling protocols. The report will include a schedule for implementing all of the necessary changes. An annual report shall be submitted on February 19 of each year to the addresses in the Monitoring and Reporting Section below, summarizing all exceedances of the TRC and fecal coliform effluent limits during the previous year, the estimated or measured fecal coliform and chlorine discharge levels during the exceedance, and measures taken to fix the problem and

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to prevent future occurrences.

### D. SLUDGE CONDITIONS

1. The permittee shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices and with the CWA Section 405(d) technical standards.
2. The permittee shall comply with the more stringent of either the state or federal (40 CFR part 503), requirements.
3. The requirements and technical standards of 40 CFR part 503 apply to facilities which perform one or more of the following use or disposal practices.
  - a. Land application - the use of sewage sludge to condition or fertilize the soil
  - b. Surface disposal - the placement of sewage sludge in a sludge only landfill
  - c. Sewage sludge incineration in a sludge only incinerator
4. The 40 CFR part 503 conditions do not apply to facilities which place sludge within a municipal solid waste landfill. These conditions also do not apply to facilities which do not dispose of sewage sludge during the life of the permit but rather treat the sludge (lagoons- reed beds), or are otherwise excluded under 40 CFR 503.6.
5. The permittee shall use and comply with the attached compliance guidance document to determine appropriate conditions. Appropriate conditions contain the following elements.
  - General requirements
  - Pollutant limitations
  - Operational Standards (pathogen reduction requirements and vector attraction reduction requirements)
  - Management practices
  - Record keeping
  - Monitoring
  - Reporting

Depending upon the quality of material produced by a facility, all conditions may not apply to the facility.
6. The permittee shall monitor the pollutant concentrations, pathogen reduction and vector attraction reduction at the following frequency. This frequency is based upon the volume of sewage sludge generated at the facility in dry metric tons per year

less than 290	1/ year
290 to less than 1500	1 /quarter
1500 to less than 15000	6 /year
15000 +	1 /month
7. The permittee shall sample the sewage sludge using the procedures detailed in 40 CFR 503.8.
8. The permittee shall submit an annual report containing the information specified in the guidance on February 19. Reports shall be submitted to the address contained in the reporting section of the permit. Sludge monitoring is not required by the permittee when the permittee is not responsible for the ultimate sludge disposal. The permittee must be assured that any third party contractor is in compliance with

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appropriate regulatory requirements. In such case, the permittee is required only to submit an annual report on February 19 containing the following information:

- Name and address of contractor responsible for sludge disposal
- Quantity of sludge in dry metric tons removed from the facility by the sludge contractor

### **F. MONITORING AND REPORTING**

#### **1. Reporting**

Monitoring results obtained during each calendar month shall be summarized and reported on Discharge Monitoring Report Form(s) postmarked no later than the 15th day of the following month.

Signed and dated originals of these, and all other reports required herein, shall be submitted to the Director and the State at the following addresses:

Environmental Protection Agency  
Water Technical Unit (SEW)  
P.O. Box 8127  
Boston, Massachusetts 02114

The State Agency is:

Massachusetts Department of Environmental Protection  
Bureau of Resource Protection  
Central Regional Office  
627 Main Street  
Worcester, MA 01608

Signed and dated Discharge Monitoring Report Forms and toxicity test reports required by this permit shall also be submitted to the State at:

Massachusetts Department of Environmental Protection  
Division of Watershed Management  
Surface Water Discharge Permit Program  
627 Main Street, 2nd Floor  
Worcester, Massachusetts 01608

### **G. STATE PERMIT CONDITIONS**

This Discharge Permit is issued jointly by the U. S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (DEP) under Federal and State law, respectively. As such, all the terms and conditions of this permit are hereby incorporated into and constitute a discharge permit issued by the Commissioner of the MA DEP pursuant to M.G.L. Chap.21, §43.

Each Agency shall have the independent right to enforce the terms and conditions of this Permit. Any modification, suspension or revocation of this Permit shall be effective only with respect to the Agency taking such action, and shall not affect the validity or status of this Permit as issued by the other Agency, unless and until each Agency has concurred in writing with such modification, suspension or revocation. In the event any portion of this Permit is declared, invalid, illegal or otherwise issued in violation of State law such permit shall remain in full force and effect under Federal law as an NPDES Permit issued by the U.S. Environmental Protection Agency. In the event this Permit is declared invalid, illegal or otherwise issued in violation of Federal law, this Permit shall remain in full force and effect under State law as a Permit issued by the Commonwealth of Massachusetts.